

CLAIMS

1. A dynamic flexible computer implemented auction system comprising

5 a) at least two intelligent systems including an auctioneer's and at least one user system, the auctioneer's system communicatively coupled to each user system,

b) each user system providing an interface with:

10 b1) means for receiving messages from the auctioneer's system and for displaying those messages,

b2) means for receiving flexible bid information from a user and for transmitting the flexible bid information to a user data base,

15 c) said auctioneer's system providing:

c1) means for generating and transmitting messages to each user system,

20 c2) means for generating queries for each user data base and for receiving answers to the queries from each user data base,

c3) decision means responsive to the answers from the user data base for determining if an auction should continue or not,

25 c31) said decision means initiating the generation of another message to at least one user system in response to a determination to continue the auction, and

c32) said decision means initiating the generation of a final message to at least one user system in response to a determination not to continue the auction, and

5 d) said auction system further comprising a user data base for each user system, said user data base including

d1) means for receiving and storing the flexible bid information for a user system,

10 d2) means for receiving queries from the auctioneer's system and for generating and passing answers comprising information based on said flexible bid information to the auctioneer system in response to queries from the auctioneer's system.

15 2. A system as recited in claim 1 wherein each said user data base resides in a user system and queries from the auctioneer system are transmitted to the user system and the answers from the user data base are transmitted to the auctioneer's system.

20 3. A system as recited in claim 1 wherein each said user data base resides in the auctioneer system and flexible bid information from each user system is transmitted to and stored in the auctioneer's system.

25 4. A system as recited in claim 1 wherein each said user data base resides in a system data base communicatively coupled to each user system to receive and store flexible bid information and communicatively coupled to the auctioneer system to receive queries from the auctioneer's system and to transmit answers to the auctioneer's system.

30 5. A system as recited in claim 1 wherein said queries include a monotonically changing parameter which is used in generating said answers from the user data base.

6. A system as recited in claim 5 wherein said decision means sums information contained in current answers to determine if said auction should continue or not.

7. A system as recited in claim 6 wherein said flexible bid information may be entered at any time consistent with the monotonically changing parameter.

8. A system as recited in claim 1 wherein said flexible bid information may be superseded at any time and superseded bid information will have no effect thereafter.

9. A system as recited in claim 1 wherein said flexible bid information may be entered in a user system at any time and will have effect beginning at the time the flexible bid information is entered.

10. A dynamic flexible computer implemented auction method implemented in an auction system comprising at least two intelligent systems including an auctioneer's and at least one user system, the auctioneer's system communicatively coupled to all of the user systems, each said user system providing an interface for receiving messages from the auctioneer's system and for displaying those messages, for receiving flexible bid information and transmitting the flexible bid information to a user data base, said auctioneer's system for generating and transmitting messages to each systems, for generating queries for user data bases and for receiving answers to the queries from user data bases, said method comprising the steps of:

a) initiating an auction with a message sent to each user system containing information related to the auction and soliciting bids,

b) entering flexible bid information into at least one user system and storing said flexible bid information in a user data base,

c) querying at least one user data base for an answer, said query including at least one query parameter,

d) generating a answer to said query at a user data base based on the query parameter and the contents of the user data base where the answer includes at least one answer parameter,

e) evaluating an answer at the auctioneer's system to determine if additional querying should occur before a new message is sent to at least one user system,

e1) in the event that additional querying should occur before a new message is sent, querying at least one user data base with a query containing at least one modified parameter,

e2) in the event that no additional querying should occur before a new message is sent, evaluating answers received at the auctioneer's system to determine if the auction should continue,

e3) in the event that the auction is continued, sending a new message to at least one user system,

e4) in the event that the auction is not continued, sending a final message to at least one user system containing the results of the auction, and

f) repeating steps c) - e) until it is determined that the auction should not continue.

11. A method as recited in claim 10 wherein said flexible bid information may be entered at any time consistent with a current query parameter.

12. A method as recited in claim 10 which includes the further step of cancelling the flexible bid information whereby the cancelled flexible bid information will have no effect thereafter.

13. A method as recited in claim 10 wherein said flexible bid information may be entered in a user system at any time and will have effect beginning at the time the flexible bid information is entered.

14. A method as recited in claim 10 wherein said step (e) comprises summing said answer parameter of a plurality of answers and comparing said sum to a predetermined auction parameter to determine if said auction should continue.

15. A computer implemented auction method implemented in an auction system comprising at least two intelligent systems including an auctioneer's and at least one user system, the auctioneer's system communicatively coupled to all of the user systems, each of said user systems providing an interface for receiving messages from the auctioneer's system and for displaying those messages, for receiving bid information and transmitting the bid information to a user data base, said auctioneer's system for generating and transmitting messages to user systems, for generating queries for user data bases and for receiving answers to the queries from user data bases, said method comprising the sequential steps of:

a) initiating an auction with a message sent to each user system containing information related to the auction and soliciting bids,

b) entering bid information into each user system and storing said bid information in a user data base,

c) querying at least one user data base for an answer to a query, said query including at least one query parameter, where at least one said query addresses less than all of said bid information,

d) generating an answer to said query at a user data base based on the query parameter and the contents of the user data base where the answer includes at least one answer parameter,

5 e) evaluating an answer at the auctioneer's system to determine if additional querying should occur,

e1) in the event that additional querying should occur, querying at least one user data base with a query containing at least one modified parameter,

10 e2) in the event that no additional querying should occur, evaluating answers received at the auctioneer's system to determine the results of the auction and sending a final message to at least one user system containing the results of the auction, and

15 f) repeating steps c) - e) until it is determined that no additional querying should occur.

20 16. A method as recited in claim 15 wherein said auction relates to multiple dissimilar objects.

17. A method as recited in claim 16 wherein said query parameter comprises identification of at least two sets, each set comprising one or more objects, and a scalar value.

25 18. A method as recited in claim 17 wherein said answer parameter is a binary value.

19. A method as recited in claim 16 which includes, prior to said step c), the steps of:

i) selecting a pair of user systems,

ii) selecting a first subset X of said multiple dissimilar objects and thereby defining a complement $/X$ of said first subset X,

iii) selecting a second subset Y of said multiple dissimilar objects, not equal to said first subset, and thereby defining a complement $/Y$ of said first subset Y,

iv) initializing a value parameter p,

and wherein said step c comprises:

c1) querying a first of said pair of user systems if said bid information for X less said bid information for Y is greater or equal to the value parameter p,

c2) querying a second of said pair of user systems if said bid information for $/Y$ less said bid information for $/X$ is greater than or equal to said value parameter.

20. A method as recited in claim 19 wherein said answer parameter is a binary value.

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